AMENDMENTS TO THE CLAIMS

Following is a listing of all claims in the present application, which listing supersedes all previously presented claims:

Listing of Claims:

1.   (Original) A method of measuring a concentration of a component in a subject, comprising:

setting an intensity relationship equation between a positive-order beam and a negative-order beam with respect to a reference matter at a particular wavelength by measuring both the positive-order and negative-order beams output from the reference matter;

applying a light having a first wavelength band absorbed by the component and detecting an intensity of a positive-order beam output from the subject and an intensity of a negative-order beam output from the reference matter, the positive-order beam and the negative-order beam having a second wavelength band;

calculating an intensity of a positive-order beam input to the subject by applying the intensity of the negative-order beam output from the reference matter to the intensity relationship equation; and

calculating absorbance using the intensity of the positive-order beam output from the subject and the intensity of the positive-order beam input to the subject and measuring a concentration of the component using the absorbance.

2.   (Original) The method as claimed in claim 1, wherein setting the intensity relationship equation comprises:

generating the positive-order and negative-order beams having the second wavelength band from the light, which has the first wavelength band and is provided from a light source, according to a radio frequency (RF) signal having a predetermined frequency;

radiating the positive-order and negative-order beams onto the reference matter and detecting the intensities of the respective positive-order and negative-order beams output from the reference matter; and

setting the intensity relationship equation based on the detected intensities of the positive-order and negative-order beams.

3.   (Original) The method as claimed in claim 1, wherein applying the light having the first wavelength band and detecting the intensities of the positive-order beam output from the subject and the negative-order beam output from the reference matter comprises:

generating the positive-order and negative-order beams having the second wavelength band from the light, which has the first wavelength band and is provided from the light source, according to a radio frequency (RF) signal having a predetermined frequency; and

radiating the generated positive-order and negative-order beams onto the subject and the reference matter, respectively; and

detecting the intensity of the positive-order beam output from the subject and the intensity of the negative-order beam output from the reference matter.

4.   (Original) A computer readable recording medium having recorded therein a

program for executing the method as claimed in claim 1.

5.   (Currently Amended) An apparatus for measuring a concentration of a

component in a subject, comprising:

a light source that generates a light having a first wavelength band for the component;

~~a radio frequency (RF) signal generator that generates a radio frequency (RF) signal~~

~~having a predetermined frequency so that a light having a second wavelength band can be~~

~~generated from the light having the first wavelength band;~~

a tunable filter that receives the light having the first wavelength band and generates a

positive-order beam and a negative-order beam, which have [[the]] a second wavelength band,

according to a tuning signal applied thereto ~~the RF signal provided by the RF signal generator~~;

a first light detector that detects a first output beam reflected from or transmitted through

the subject onto which the positive-order beam generated by the tunable filter has been radiated;

a second light detector that detects a second output beam reflected from or transmitted

through a reference matter onto which the negative-order beam generated by the tunable filter

has been radiated; and

a signal processor, which has been previously provided with an intensity relationship

equation between the positive-order beam and the negative-order beam obtained by measuring

both the positive-order and negative-order beams output from the reference matter, that

calculates an intensity of the positive-order beam input to the subject by applying an intensity of

the second output beam from the reference matter to the intensity relationship equation,

calculates absorbance using the intensity of the first output beam from the subject and the

intensity of the positive-order beam input to the subject, and measures a concentration of the component using the absorbance.

6.   (Original) The apparatus as claimed in claim 5, further comprising a condenser lens on an optical path between the light source and the tunable filter to condense the light emitted from the light source.

7.   (Original) The apparatus as claimed in claim 5, wherein the light source is a halogen lamp.

8.   (Original) The apparatus as claimed in claim 5, wherein the first and second light detectors are photodetectors made of a material selected from the group consisting of InGaAs, PbS, and InSb.

9.   (Original) The apparatus as claimed in claim 5, wherein the tunable filter comprises:

a transducer; and

an acoustic-optic medium.

10.   (Original) The apparatus as claimed in claim 9, wherein the acoustic-optic medium is a crystal.

11.   (Original) The apparatus as claimed in claim 5, further comprising a beam guiding unit that guides the positive-order beam generated by the tunable filter to be transmitted to be parallel to the subject and guides the negative-order beam generated by the tunable filter to be transmitted to be parallel to the reference matter.

12.   (Original) The apparatus as claimed in claim 5, wherein the first and second beam guiding units are selected from the group consisting of a tapered aluminum tube, a glass rod, and a hollow waveguide.

13.   (Original) The apparatus as claimed in claim 11, further comprising a refractive index matching unit, which is disposed between the beam guiding unit and the subject, to match an internal refractive index of the subject with an external refractive index of the subject.

14.   (Original) The apparatus as claimed in claim 5, wherein the signal processor obtains the intensity relationship equation using a positive-order beam and a negative-order beam, which are output from the reference matter when a positive-order beam and a negative-order beam generated by the tunable filter at a particular wavelength are radiated onto the reference matter.

15.   (New) The apparatus as claimed in claim 5, further comprising a radio frequency (RF) signal generator that generates a radio frequency (RF) signal having a predetermined frequency, the RF signal serving as the tuning signal for the tunable filter.

16.   (New) The apparatus as claimed in claim 15, wherein the signal processor stores intensity relationship equations corresponding to at least one of the first wavelength band and the second wavelength band and the RF signal.

17.   (New) The apparatus as claimed in claim 5, wherein setting the intensity relationship includes storing intensity relationship equations corresponding to at least one of the first wavelength band, the second wavelength band and the tuning signal.

18.   (New) The method as claimed in claim 1, wherein setting the intensity relationship includes storing intensity relationship equations corresponding to at least one of the first wavelength band and the second wavelength band.

19.   (New) The method as claimed in claim 2, wherein setting the intensity relationship includes storing intensity relationship equations corresponding to at least one of the first wavelength band, the second wavelength band and the RF signal.